

kind of an ocellate spot in my form again points to a relationship with *ocellatus*, which is also supported by the examination of the male genitalia.

Thus we might expect our *Culex chalcocorystes* to have a larva similar to *ocellatus*, and as the larva under discussion fits these conditions I am convinced that we are dealing with the larva of this species.

Thus it appears that there is a small group of closely related species of *Culex*, united by characters of the larvæ as well as of the male genitalia and other peculiarities of the adults, a group in which we find every degree of shortening of the male palpi. If more support were needed for the view of Dyar and Knab that the length of the palpi is entirely insignificant systematically, this group would furnish it. Or shall we take *Culex ocellatus* to be a culicine and *latisquama* an aedine mosquito, because the palpi of the former are three-fourths, the latter only half the length of the proboscis? Or would one establish a new subfamily for these two species?

Before closing I desire to express my sincere thanks to all my American friends, especially to Dr. L. O. Howard and Mr. Frederick Knab, who helped me to obtain, during my rather brief stay, not only a knowledge of the methods of the Bureau of Entomology and the wonderful progress in sanitation in Cuba and Panama, but also introduced me into the systematic study of the Culicidæ, so that I am enabled to give the above descriptions of new species.

## SOME BROMELIADICOLOUS BLATTIDÆ FROM MEXICO AND CENTRAL AMERICA

By A. N. CAUDELL

The following species of Blattidæ were taken in epiphytic Bromeliaceæ in Cordoba, Mexico, 1908, by F. Knab, and in Panama by A. H. Jennings. But two of the nine determined species here listed are included by Señor C. Picado in his recent comprehensive treatise on the fauna of these plants. To the few species of Tettigonidæ recorded by Picado should be added the wingless Copiphoriine, *Dectinomima jenningsi* Caud., described in 1910 from specimens taken in Bromelias by Mr. Jennings.

The number of species of insects to be found in Bromeliads is probably greater than published records would indicate. Especially is this

probable if transient visitors are included, such as some of the recorded species very surely are. Many of the recorded forms are, on the other hand, truly bromeliadicolous. As typical examples of true bromeliadicolous insects may be mentioned the dragon fly, *Mecistogaster modestus*, the brachypterous roach, *Homalopteryx scotti*, and various species of Diptera, especially mosquitoes.

Of the Blattidæ herein treated one species at least, *Audreia bromeliarum*, n. sp., is perfectly at home in the Bromelias. The collector, Mr. Jennings, found these roaches would dive boldly into the water when disturbed. Most roaches found inhabiting these plants are apterous, brachypterous, or of a compact structure, forms apparently well adapted to an aquatic or subaquatic existence. One of the species herein described, however, *Latindia armata*, n. sp., has large elytra, seemingly but poorly fitted for such surroundings.

Aside from the systematic interest of containing three species supposedly new to science, the present lot of roaches is remarkable for the small proportion of the species before recorded as bromeliadicolous.

### **Ischnoptera occidentalis** Saussure.

One female, Cordoba, Mexico, April 28, 1908, F. Knab.

### **Blattella nahua** Saussure and Zehntner.

Three males, three females, Cordoba, Mexico, March 19 to April 28, 1908, F. Knab.

### **Blattella** sp.

Four males, Cordoba, Mexico, April 5, 1908, F. Knab.

### **Nyctibora brunnea** Thunberg.

One female (nymph), Porto Bello, Panama, A. H. Jennings.

### **Audreia marginata**, new species.

One female, Porto Bello, Panama, A. H. Jennings.

Apparently most nearly related to *Audreia carinulata* Saussure but is structurally quite different, especially the armature of the legs. The middle and hind metatarsi of *A. carinulata* are distinctly spined beneath, while in *marginata* they are unarmed, at least those of the middle legs, those of the hind legs being missing from the unique type specimen.

Size medium, form moderately convex. Head slightly exposed. Pronotum a little broader than long, anteriorly elliptical, posterior roundly

and broadly obtuse-angulate. Abdomen decidedly broader across the middle than the widest part of the pronotum, the lateral angles of the segments not produced, the apical one or two slightly so; supraanal plate transverse, apically entire; subgenital plate about twice as broad as long and apically entire and evenly rounded; cerci short, broad, and pointed, apparently unsegmented.

Elytra subquadrate, about as long as the pronotum, apically truncate or slightly concave, the inner margins slightly overlapping in the apical half when at rest. Wings rudimentary.

Legs stout; femora with each ventral margin armed, in addition to the apical spines, with two to three or four spines in the middle and hind legs, the front ones with a single spine on the side only; tibiæ short, the front ones scarcely more than two times as long as the greatest width; tarsi short, the metatarsi unarmed beneath.

Color black, the pronotum with the front and sides with a conspicuous yellow marginal stripe which extends backward onto the costal area of the tegmina; legs reddish yellow; top of head and the mouth parts also lighter in color. The head, both above and in front, the pronotum and the elytra with minute scattered punctures, more noticeable on the elytra, especially on the dorsal field, where they are arranged in parallel diagonal rows.

Length, total, 17 mm.; pronotum, 5 mm. Width, abdomen in middle, 8.5 mm.; pronotum posteriorly, 6.5 mm.

Type, Cat. No. 18359, U. S. Nat. Mus.

**Audreia bromeliarum**, new species.

One female, Upper Pequini River, Panama, March, 1909, A. H. Jennings.

Superficially resembling *A. cicatricosa* Rehn but readily separated from that species by the head being distinctly exposed, the front of the head being smooth and shiny instead of rugosely pitted as in *cicatricosa* and by the posterior metatarsus being shorter than the rest of the segments combined and unarmed below, while in *cicatricosa* it is fully as long as the rest of the segments and spined beneath for most the length.

Size medium, form depressed and elliptical; head distinctly exposed, not completely concealed beneath the pronotum as in some of the allied forms; vertex shallowly punctate, the face smooth and shiny; antennæ about half as long as the body. Pronotum nearly truncate behind, very slightly rounded, anteriorly semicircularly rounded; mesonotum and meta-

notum posteriorly broadly concave, the latter less noticeably so, subsinuate toward the lateral margins. Abdomen equally long and broad with the entire thorax, the lateral margins of the segments with a few minute posteriorly directed serrations, the posterior angles not produced; subgenital plate entire, rounded; supraanal plate transverse and shallowly notched apically; cerci short, about twice as long as broad and apically sharply pointed, not extending nearly to the apex of the anal plates. Thorax and anterior portion of the dorsal surface of the abdomen distinctly punctate, the punctures giving way toward the hinder portion of the abdomen to minute granules and these growing less till the last segment or two are nearly or quite smooth; besides the above-mentioned punctures and granules the mesonotum and metanotum and all the abdominal segments are marked by a transverse row of small low smooth tubercles along the posterior margin, largest on the basal four abdominal segments.

Legs stout, the tibiæ short, especially the fore ones, which are scarcely more than three times as long as broad; fore femora unarmed beneath, the middle and hind ones armed with two or three spines on each ventral margin; posterior metatarsus shorter than the rest of the tarsal segments together and unarmed beneath.

Wings and elytra entirely wanting.

Color uniformly wood brown, the legs and head, except eyes, which are piceous, a little lighter; the abdomen is a shade lighter than the thorax.

Length, total, 23.5 mm.; pronotum, 7 mm. Width, pronotum posteriorly, 11.5 mm.

Type, Cat. No. 18358, U. S. Nat. Mus.

Mr. Jennings found this species to dive fearlessly into the water in the bromelias when disturbed, disappearing beneath the surface and remaining submerged for some considerable time. A number of specimens were seen but efforts to secure them proved unavailing.

### ***Epilampra sodalis* Walker.**

Three females, one nymph, Porto Bello Bay, Panama, A. H. Jennings.

### ***Pelmatosilpha rotundata* Scudder.**

One male, Porto Bello Bay, Panama, A. H. Jennings.

### ***Pycnoscelis surinamensis* Scudder.**

One nymph, Cordoba, Mexico, January 16, 1908, F. Knab.

**Latindia armata**, new species.

One male, Gatun, Canal Zone, Panama, A. H. Jennings.

A large yellowish brown species differing from the described forms by having the femora of all the legs armed on one side, the middle and hind ones with a couple of spines and the front ones with three. A new genus might with justice be based on this character.

Head black, mouth parts yellowish; eyes large, separated by a space about as great as that between the antennal pits; ocelli small, round, yellowish in color and moderately prominent; front and occiput with short black hair; antennæ yellowish except the basal segment, which is black. Pronotum subelliptical, more rounded anteriorly than posteriorly, gently convex, the disk with a large transversely oval shallow depression, more distinct laterally, the whole disk with a not very dense covering of short hairs, yellowish brown in color with some darker mottlings and marked with some minute scattering round light spots with a black dot in the center of each. Abdomen with the posterior-lateral angles not produced; supraanal and subgenital plates seem to be transverse and entire, though they are somewhat injured in the unique type specimen; cerci very long, subtriangular in transverse section, and very distinctly segmented, the segments tapering at each end, the whole sparsely covered with short hairs.

Elytra yellowish brown with darker maculations, the surface with very short scattering hairs. Wings fuliginous, a row of distinct blackish spots marking the costal terminations of the radial branches; anal field slightly over half as long as anterior field with a small second fold when at rest.

Legs slender, brownish, the tarsi hairy above and below, the posterior metatarsus longer than the rest of the segments together; tibiæ with about five long apical spines and with a double series of similar spines above and the middle and hind ones with a couple beneath also, the fore ones unarmed beneath; femora, in addition to movable genicular spines, armed beneath on one margin with two spines on the middle and hind legs and three on the anterior ones.

Length, total, 12 mm.; pronotum, 2.5 mm.; elytra, 10 mm. Width, pronotum, 3 mm.

Type, Cat. No. 18360, U. S. Nat. Mus.

This ample winged roach will probably be found to not be a typically bromeliadiculous species.

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